

Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims

Claims 1-5 (**Canceled**).

Claim 6 (**Currently Amended**): ~~The method of claim 5;~~ A method for luminance noise filtering, comprising:

inputting a region of pixel data from an image sensor;

determining a virtually filtered luminance from a first processing of said region of pixel data and without using other pixel data for a pixel location within the region;

determining a reference luminance for the pixel location from a second processing of said same region of pixel data and without using other pixel data,

wherein the reference luminance is determined after respective interpolated color components for the pixel location are determined such that the reference luminance is determined using said respective interpolated color components;

selecting between the virtually filtered luminance and the reference luminance as a final luminance of the pixel location depending on an adaptive luminance;

determining a threshold value from the adaptive luminance;

selecting the virtually filtered luminance if an absolute of a difference between the virtually filtered luminance and the reference luminance is less than or equal to the threshold value; and

selecting the reference luminance if the absolute of the difference between the virtually filtered luminance and the reference luminance is greater than the threshold value;

wherein the adaptive luminance is determined from an overall brightness of a previous image.

Claim 7 (**Canceled**).

Claim 8 (**Currently Amended**): ~~The method of claim 5,~~ A method for luminance noise filtering, comprising:

inputting a region of pixel data from an image sensor;

determining a virtually filtered luminance from a first processing of said region of pixel data and without using other pixel data for a pixel location within the region;

determining a reference luminance for the pixel location from a second processing of said same region of pixel data and without using other pixel data,

wherein the reference luminance is determined after respective interpolated color components for the pixel location are determined such that the reference luminance is determined using said respective interpolated color components;

selecting between the virtually filtered luminance and the reference luminance as a final luminance of the pixel location depending on an adaptive luminance;

determining a threshold value from the adaptive luminance;

selecting the virtually filtered luminance if an absolute of a difference between the virtually filtered luminance and the reference luminance is less than or equal to the threshold value; and

selecting the reference luminance if the absolute of the difference between the virtually filtered luminance and the reference luminance is greater than the threshold value;

wherein the threshold value is greater when the adaptive luminance is lower.

Claims 9-17 (**Canceled**).

Claim 18 (**Currently Amended**): ~~The system of claim 17,~~ A system for luminance noise filtering, comprising:

a memory device for storing a region of pixel data from an image sensor;

a noise filter for determining a virtually filtered luminance from a first processing of said region of pixel data and without using other pixel data for a pixel location within the region;

a matrix for determining a reference luminance for the pixel location from a second processing of said same region of pixel data and without using other pixel data;

wherein the matrix determines the reference luminance after respective interpolated color components for the pixel location are determined such that the reference luminance is determined using said respective interpolated color components;

and wherein the noise filter selects between the virtually filtered luminance and the reference luminance as a final luminance of the pixel location depending on an adaptive luminance; and

a data processor that determines a threshold value from the adaptive luminance;

wherein the noise filter selects the virtually filtered luminance if an absolute of a difference between the virtually filtered luminance and the reference luminance is less than or equal to the threshold value;

and wherein the noise filter selects the reference luminance if the absolute of the difference between the virtually filtered luminance and the reference luminance is greater than the threshold value;

and wherein the adaptive luminance is determined from an overall brightness of a previous image.

Claim 19 (Canceled).

Claim 20 (Currently Amended): ~~The system of claim 17,~~ A system for luminance noise filtering, comprising:

a memory device for storing a region of pixel data from an image sensor;

a noise filter for determining a virtually filtered luminance from a first processing of said region of pixel data and without using other pixel data for a pixel location within the region;

a matrix for determining a reference luminance for the pixel location from a second processing of said same region of pixel data and without using other pixel data;

wherein the matrix determines the reference luminance after respective interpolated color components for the pixel location are determined such that the reference luminance is determined using said respective interpolated color components;

and wherein the noise filter selects between the virtually filtered luminance and the

reference luminance as a final luminance of the pixel location depending on an adaptive luminance; and

a data processor that determines a threshold value from the adaptive luminance;
wherein the noise filter selects the virtually filtered luminance if an absolute of a difference between the virtually filtered luminance and the reference luminance is less than or equal to the threshold value;

and wherein the noise filter selects the reference luminance if the absolute of the difference between the virtually filtered luminance and the reference luminance is greater than the threshold value;

and wherein the threshold value is greater when the adaptive luminance is lower.

Claims 21-27 (**Canceled**).

Claim 28 (**New**): The method of claim 6, wherein the second processing includes the steps of:

determining said interpolated color components for the pixel location from said region of pixel data; and

determining the reference luminance for the pixel location from the interpolated color components.

Claim 29 (**New**): The method of claim 6, wherein the virtually filtered luminance is determined by averaging a respective pixel data multiplied with a respective weighting coefficient for each pixel location of the region.

Claim 30 (**New**): The method of claim 6, wherein the image sensor is part of a hand-held image pick-up device having minimized line memory capacity.

Claim 31 (**New**): The method of claim 6, wherein the threshold value is greater when the adaptive luminance is lower.

Claim 32 (New): The method of claim 8, wherein the second processing includes the steps of:

determining said interpolated color components for the pixel location from said region of pixel data; and

determining the reference luminance for the pixel location from the interpolated color components.

Claim 33 (New): The method of claim 8, wherein the virtually filtered luminance is determined by averaging a respective pixel data multiplied with a respective weighting coefficient for each pixel location of the region.

Claim 34 (New): The method of claim 8, wherein the image sensor is part of a hand-held image pick-up device having minimized line memory capacity.

Claim 35 (New): The system of claim 18, wherein the matrix determines said interpolated color components for the pixel location from said region of pixel data such that the reference luminance is determined from the interpolated color components.

Claim 36 (New): The system of claim 18, and wherein the threshold value is greater when the adaptive luminance is lower.

Claim 37 (New): The system of claim 18, wherein the virtual luminance is determined by averaging a respective pixel data multiplied with a respective weighting coefficient for each pixel location of the region.

Claim 38 (New): The system of claim 18, wherein the image sensor is part of a hand-held image pick-up device having minimized line memory capacity.

Claim 39 (New): The system of claim 20, wherein the matrix determines said interpolated color components for the pixel location from said region of pixel data such that the reference luminance is determined from the interpolated color components.

Claim 40 (New): The system of claim 20, wherein the virtual luminance is determined by averaging a respective pixel data multiplied with a respective weighting coefficient for each pixel location of the region.

Claim 41 (New): The system of claim 20, wherein the image sensor is part of a hand-held image pick-up device having minimized line memory capacity.